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09/741,958	12/20/2000	Michael Neal	DEM1P001	7264
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KANG LIM 3494 CAMINO TASSAJARA ROAD #436 DANVILLE, CA 94306			EXAMINER ROBINSON BOYCE, AKIBA K	
			ART UNIT 3628	PAPER NUMBER
			MAIL DATE 11/16/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/741,958

Applicant(s)

NEAL ET AL.

Examiner

Akiba K. Robinson-Boyce

Art Unit

3628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/22/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Status of Claims***

1. Due to communications filed 8/30/07, the following is a final office action. Claims 1, 4, and 6 have been amended. Claims 1-16 are pending in this application and have been examined on the merits. The previous rejection has been adjusted to reflect claim amendments submitted, however, the basis for the rejection has not changed. Claims 1-16 are rejected as follows.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 5, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641), and further in view of Ouimet et al (US 6,078,893).

As per claim 1, Ouimet '641 discloses:

an econometric engine for modeling internal sales as a function of price to create a sales model..., (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal);

wherein the internal sales model is for the discrete sets of highly substitutable products, (Col. 3, lines 1-12, shows models are based around consumer products, in this case, specifying of *substitutable* as a type of claim amounts to the recitation of non-functional data; the type of claim has no bearing on the invention as claimed, and thus carries no patentable weight);

a financial model engine for modeling costs to create a cost model, (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, (Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system is computer-implemented and in order to create models, a module is necessary in a computerized system);

wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity... (Col. 2, lines 5-17, determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity); and

wherein computing costs utilizes industry data to provide standard cost estimates, (Col. 5, lines 41-42, perceived pricing estimates/standard fitting applied);

and wherein the total cost for each product is dependent upon the attribute information of that product, (this limitation is obvious since promotions can be based on attributes of a product, for example, for buy one get one free, and the product is a cookie, a buyer would receive an additional cookie based on the fact that he or she is

buying "cookies", where the product being a "cookie" and not a "doughnut" is an attribute).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the total cost for each product to be dependent upon the attribute information of that product with the motivation of providing total cost based on the type of product.

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}])).

Ouimet '641 does not specifically disclose the following:

wherein variable costs are related to the volume of sales and wherein fixed costs are independent of volume of sales.

But does disclose variable costs due to attributes such as promotional activity as discussed above, and fixed costs through optimum price as discussed above.

Ouimet '641 also discloses "adjustable market model parameters", which adds a penalty for values of the parameter in order to further adjust the demand model. In this case, the addition of the penalty turns a fixed cost into a variable solution.

However, the above limitation is obvious with Ouimet '641 since the volume of sales is a variable parameter, and it would only be logical to associate variable costs with increasing or decreasing sales, and not costs that are fixed.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for variable costs to be related to the volume of sales and fixed costs to be independent of the volume of sales with the motivation of associating variable costs with a changing parameter.

Ouimet '641 fails to disclose a configuration to receive variable costs and fixed costs, but does disclose a pricing module in col. 4, lines 52-53.

However, Ouimet '893 discloses:

configured to receive variable costs and fixed costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model.

Ouimet '641 also does not disclose wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information, but does disclose receiving pricing parameters for a plurality of products as inputs in col. 6, lines 29-67.

However, Ouimet '893 discloses:

wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, in this case, items that are in a particular demand are in a demand group, and are subject to a certain demand model, which occurs as a result of comparison of the demand for a single item in relation to all other items, and also, col. 8, lines 28-38, shows market is broken into well defined groups for the selection of a model, w/ col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group, where each set is represented by a group, w/ col. 2, lines 19-32, shows that a definition derived from figure-of merit functions, is selected by a user to use in fitting the model parameters [for a consumer demand model], in this case, each group [set] is unique to said user since the user uses a certain definition for use in

the selection of a model). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information with the motivation of allowing a particular set of related products to be evaluated, and for preferred prices to be computed from the evaluation.

Neither Ouimet '641 nor Ouimet '893 disclose where costing activity includes labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing, but Ouimet '641 does disclose determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity Col. 2, lines 5-17, thereby making the above limitations obvious since labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing are all commonly utilized activities in product development that influence the actual cost for developing the product.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to include labor, stocking time, transportation, receiving, inventory,



bagging, checkout and invoicing in costing activities with the motivation of including factors that will affect the cost of developing a product.

As per claim 4, Ouimet '641 discloses:

creating an internal sales model..., (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal);

creating a cost model, (col. 4, lines 52-53, [pricing model], which includes activity-based costing, Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model);

wherein the internal sales model is for the discrete sets of highly substitutable products, (Col. 3, lines 1-12, shows models are based around consumer products, in this case, specifying of *substitutable* as a type of claim amounts to the recitation of non-functional data; the type of claim has no bearing on the invention as claimed, and thus carries no patentable weight);

Ouimet '641 does not specifically disclose the following:

wherein variable costs are related to the volume of sales and wherein fixed costs are independent of volume of sales.

But does disclose variable costs due to attributes such as promotional activity as discussed above, and fixed costs through optimum price as discussed above.

Ouimet '641 also discloses "adjustable market model parameters", which adds a penalty for values of the parameter in order to further adjust the demand model. In

this case, the addition of the penalty turns a fixed cost into a variable solution.

However, the above limitation is obvious with Ouimet '641 since the volume of sales is a variable parameter, and it would only be logical to associate variable costs with increasing or decreasing sales, and not costs that are fixed.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for variable costs to be related to the volume of sales and fixed costs to be independent of the volume of sales with the motivation of associating variable costs with a changing parameter.

wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity...(Col. 2, lines 5-17, determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity);

and wherein computing costs utilizes industry data to provide standard cost estimates, (Col. 5, lines 41-42, perceived pricing process/standard fitting applied);

and wherein the total cost for each product is dependent upon the attribute information of that product, (this limitation is obvious since promotions can be based on attributes of a product, for example, for buy one get one free, and the product is a cookie, a buyer would receive an additional cookie based on the fact that he or she is buying "cookies", where the product being a "cookie" and not a "doughnut" is an attribute.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the total cost for each product to be dependent upon the attribute information of that product with the motivation of providing total cost based on the type of product.

generating the preferred set of prices for the plurality of products based on the sales model and cost model, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}])).

Ouimet '641 fails to disclose the activity-based costing including fixed costs and variable costs, but does disclose a pricing module in col. 4, lines 52-53.

However, Ouimet '893 discloses:

the activity-based costing including fixed costs and variable costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model.

Ouimet '641 also does not disclose wherein said internal sales model clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information but does disclose receiving pricing parameters for a plurality of products as inputs in col. 6, lines 29-67.

However, Ouimet '893 discloses:

wherein said internal sales model clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, in this case, items that are in a particular demand are in a demand group, and are subject to a certain demand model, which occurs as a result of comparison of the demand for a single item in relation to all other items, and also, col. 8, lines 28-38, shows market is broken into well defined groups for the selection of a model, w/ col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group, where each set is represented by a group, w/ col. 2, lines 19-32, shows that a definition derived from figure-of merit functions, is selected by a user to use in fitting the model parameters [for a consumer demand model], in this case, each

group [set] is unique to said user since the user uses a certain definition for use in the selection of a model). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the econometric engine to cluster said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, and further wherein said each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information with the motivation of allowing a particular set of related products to be evaluated, and for preferred prices to be computed from the evaluation.

Neither Ouimet '641 nor Ouimet '893 disclose where costing activity includes labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing, but Ouimet '641 does disclose determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity Col. 2, lines 5-17, thereby making the above limitations obvious since labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing are all commonly utilized activities in product development that influence the actual cost for developing the product.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to include labor, stocking time, transportation, receiving, inventory,

bagging, checkout and invoicing in costing activities with the motivation of including factors that will affect the cost of developing a product.

As per claim 5, Ouimet '641 discloses:

creating an internal sales model for each discrete sets of related products...for a given time period in a given store, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal);

wherein said sets are generated by comparing product attribute information, for modeling sales of each discrete sets of related products for a given time period..., (Col. 5, lines 24-31, shows a demand model for a promotional activity that was occurring at the time of sale);

Ouimet '641 fails to disclose creating a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '893 discloses:

creating a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products, wherein said sets are

generated by comparing product attribute information, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, in this case, items that are in a particular demand are in a demand group, and are subject to a certain demand model, which occurs as a result of comparison of the demand for a single item in relation to all other items, and also, col. 8, lines 28-38, shows market is broken into well defined groups for the selection of a model, w/ col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group, where each set is represented by a group, w/ col. 2, lines 19-32, shows that a definition derived from figure-of merit functions, is selected by a user to use in fitting the model parameters [for a consumer demand model], in this case, each group [set] is unique to said user since the user uses a certain definition for use in the selection of a model). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products a set of at least two products.

Ouimet '641 fails to disclose creating a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period, but does disclose the utilization of a demand model to optimize prices.

However, Ouimet '893 discloses:

creating a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period, (col. 8, lines 9-13, shows demand parameter can depend on the degree to which the relative portion of the sales history is free of noise, where the relative portion is analogous to the fraction of internal sales, lines 35-37, [maximize market share by using demand model by breaking up market into smaller well-defined groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that a fraction or portion of the market share can be modeled and maximized by using the demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period with the motivation of determining a fraction or portion of market shares according to categories.

4. Claims 2, 3, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641) as applied to claim 1 above, and further in view of Ouimet et al (US 6,078,893), and further in view of Ouimet et al (US 6,308,162).

As per claim 2, Ouimet '641 discloses:

a price calculator connected to...the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on..., the sales model, and the cost model, (Col. 8, lines 18-20, [shows calculating],



col. 5, lines 50-55 and 60-65, [see equations listed where calculating is done via the equations]);

Ouimet '641 fails to disclose further wherein said price limiting strategic considerations constrain the preferred set of prices to fall within limits conforming to business strategy, wherein said strategy implementation module is a natural language based rules engine which translates said price limiting strategic considerations into rules used by said price calculator, but does disclose determining a preferred set of prices as disclosed above.

However, Ouimet '893 discloses:

further wherein said rule parameters constrain the preferred set of prices to fall within limits conforming to business strategy, wherein said strategy implementation module is a natural language based rules engine which translates said price limiting strategic considerations into rules used by said price calculator, (Col. 1, lines 32-57, shows use of rule-based approach, and using a model-based approach to affect pricing where tuning of a demand model is done for fluctuations, col. 1, lines 32-35, shown that simple rules-based approaches are known in the art, therefore, the use of natural language based rules is obvious with Ouimet '893 since the natural language based rule is a simple rules-based approach), Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that rules are implemented when determining prices.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use rule parameters to constrain the preferred set of prices to

fall within limits conforming to business strategy with the motivation of showing that prices can be determined according to a set of rules.

Neither Ouimet '641 nor Ouimet '893 disclose a strategy implementation module, which stores a plurality of price limiting strategic considerations, but Ouimet '641 does disclose a routine in col. 6, lines 6-8, where rules must be present in order to successfully process the routine.

However, Ouimet '162 discloses the following:

a strategy implementation module, which stores a plurality of price limiting strategic considerations, (col. 1, lines 30-34, [rule based approach], w/ col. 4, lines 2-15, shows strategic constraint used to set prices, or col. 5, lines 65-col. 6, line 11, shows when a retailer would like his or her prices to be perceived as being lower than other retailers, this "price image" is an example of a strategic constraint). Ouimet '162 discloses this limitation in an analogous art for the purpose of showing that rules are used in an approach to optimize models, and strategic constraints are used to limit prices as being lower than other retailers.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize a strategy implementation module, which stores a plurality of price limiting strategic considerations with the motivation of going through the process of optimizing models to determine prices in a logical manner, and to strategically set prices.

As per claim 3, Ouimet '641 discloses:

further comprising a support tool connected to the optimization engine wherein the support tool receives the preferred set of prices from the optimization engine and provides a user interface to a client, wherein the user interface provides the preferred set of prices to the client, (col. 6, lines 17-26, [provided with list], w/ Fig. 1, {102}, [display]).

5. Claims 6-13, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641) and further in view of Ouimet et al (US 6,078,893), and further in view of Hartman et al (6,725,208).

As per claim 6, Ouimet et al '641 discloses:

an econometric engine for modeling internal sales as a function of price to create an internal sales model..., (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal);

wherein the internal sales model is for the discrete sets of highly substitutable products, (Col. 3, lines 1-12, shows models are based around consumer products, in this case, specifying of *substitutable* as a type of claim amounts to the recitation of non-functional data; the type of claim has no bearing on the invention as claimed, and thus carries no patentable weight);

a financial model engine for modeling costs to create a cost model which includes an activity-based costing module configured to receive variable costs and fixed costs..., wherein said cost model determines a total cost for each product in a given demand

group in a given store for a given time period by computing a cost for each selected costing activity... (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system is computer-implemented and in order to create models, a module is necessary in a computerized system );

to provide standard cost estimates, (Col. 5, lines 41-42, perceived pricing process/standard fitting applied);

and wherein the total cost for each product is dependent upon the attribute information of that product, (this limitation is obvious since promotions can be based on attributes of a product, for example, for buy one get one free, and the product is a cookie, a buyer would receive an additional cookie based on the fact that he or she is buying "cookies", where the product being a "cookie" and not a "doughnut" is an attribute.

Ouimet '641 does not specifically disclose the following:

wherein variable costs are related to the volume of sales and wherein fixed costs are independent of volume of sales.

But does disclose variable costs due to attributes such as promotional activity as discussed above, and fixed costs through optimum price as discussed above.

Ouimet '641 also discloses "adjustable market model parameters", which adds a penalty for values of the parameter in order to further adjust the demand model. In

this case, the addition of the penalty turns a fixed cost into a variable solution.

However, the above limitation is obvious with Ouimet '641 since the volume of sales is a variable parameter, and it would only be logical to associate variable costs with increasing or decreasing sales, and not costs that are fixed.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for variable costs to be related to the volume of sales and fixed costs to be independent of the volume of sales with the motivation of associating variable costs with a changing parameter.

and wherein computing costs utilizes industry standards data, (col. 5, lines 41-42, standard fitting applied)

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}])).

Ouimet '641 also does not disclose further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein said each said set is defined by a user such that each said set is unique to said user, but does disclose receiving pricing parameters for a plurality of products as inputs in col. 6, lines 29-67.

However, Ouimet '893 discloses:

wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, wherein said sets are generated by comparing product attribute information, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, in this case, items that are in a particular demand are in a demand group, and are subject to a certain demand model, which occurs as a result of comparison of the demand for a single item in relation to all other items, and also, col. 8, lines 28-38, shows market is broken into well defined groups for the selection of a model, w/ col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group, where each set is represented by a group, w/ col. 2, lines 19-32, shows that a definition derived from figure-of merit functions, is selected by a user to use in fitting the model parameters [for a consumer demand model], in this case, each group [set] is unique to said user since the user uses a certain definition for use in the selection of a model). Ouimet '893 discloses these limitations in an analogous art for the purpose of showing that products are in particular groups, and are therefore related.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, and further wherein said each said set is defined by a user such that each said set is unique to said user, with the motivation of allowing a

particular set of related products to be evaluated, and for preferred prices to be computed from the evaluation.

Neither Ouimet '641 nor Ouimet '893 disclose where costing activity includes labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing, but Ouimet '641 does disclose determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity Col. 2, lines 5-17, thereby making the above limitations obvious since labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing are all commonly utilized activities in product development that influence the actual cost for developing the product.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to include labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing in costing activities with the motivation of including factors that will affect the cost of developing a product.

Neither Ouimet et al '641, nor Ouimet '893 disclose based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, but Ouimet et al '641 does disclose utilizing demand models to optimize prices in the abstract, lines 1-5.

However, Hartman et al discloses:

based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, (Abstract, lines 1-4, shows Bayesian modeling used for optimization, and col. 8, line 62- col. 9, line 3, utilizing the weighted average of multiple models). Hartman et al discloses this limitation in an analogous art for the purpose of show in that Bayesian modeling can be used to determine optimal prices.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize Bayesian modeling wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products, with the motivation of processing a particular optimization technique to determine prices.

As per claims 7 and 8, none of the prior art listed discloses wherein the Bayesian model is a Bayesian Shrinkage model or where the Bayesian Shrinkage model is a multi-stage model, but does disclose utilizing demand models to optimize prices in the abstract, lines 1-5.

Official notice is taken that it is old and well known in the art for Bayesian models to be Bayesian Shrinkage models and for the Bayesian Shrinkage models to be multi-stage models. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the Bayesian models to be Bayesian Shrinkage models



and for the Bayesian Shrinkage models to be multi-stage models with the motivation of using these types of models to effectively come up with optimization results through a step-by-step process.

As per claim 9, Ouimet et al '641 fails to disclose wherein the econometric engine provides demand coefficients to the optimization engine, the demand coefficients used for estimating demand given market conditions, but Ouimet et al '641 does disclose using demand models to create optimized outputs in the abstract, lines 1-17.

However, Ouimet et al '893 discloses:

wherein the econometric engine provides demand coefficients to the optimization engine, the demand coefficients used for estimating demand given market conditions, (Col. 13, lines 49-55, [item-specific coefficients]). Ouimet et al '893 discloses this limitation in an analogous art for the purpose of showing that coefficients for specific items can be used to optimized prices.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide demand coefficients to the optimization engine, the demand coefficients used for estimating demand given market conditions with the motivation of utilizing coefficients to convert optimized figures according to certain conditions.

As per claim 10, Ouimet et al '641 discloses:

wherein the market conditions include a price point, (col. 7, lines 44-48, [price point]).

As per claim 11, Ouimet et al '641 fails to disclose wherein the econometric engine divides the plurality of products into a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further, where at least one of said demand groups has at least two of said products in said at least one demand group, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '893 discloses wherein the econometric engine divides the plurality of products into a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further, where at least one of said demand groups has at least two of said products in said at least one demand group, (Col. 5, lines 57-64, shows items or products are analyzed according to a given group, also, col. 8, lines 28-38, shows market is broken into well defined groups, w/ col. 10, lines 27-37, shows sales of one item can depend on the sales of other items which lead to the demand for each item in a given group). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that groups are used to determine demand.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to divide the plurality of products into a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further, where at least one of said demand groups has at least two of said products in said at least one demand group with the motivation of optimizing models according to categories.

As per claim 12, Ouimet et al '641 fails to disclose wherein the econometric engine generates a model for determining the fraction of internal sales of each discrete set of related products made up by each product, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '893 discloses:

wherein the econometric engine generates a model for determining the fraction of internal sales of each discrete set of related products made up by each product, (Col. 8, lines 9-13, shows demand parameter can depend on the degree to which the relative portion of the sales history is free of noise where the relative portion is analogous to the fraction of internal sales, w/ col. 8, lines 35-37, [maximize market share by using demand model]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market share can be modeled and maximized by using the demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to generate a market share model for said products in said demand group with the motivation of determining market shares according to categories.

As per claim 13, Ouimet '641 discloses:

Wherein the econometric engine determines an internal sales model for each discrete set of related products so that the optimization engine is able to calculate demand for said products, (Col. 4, lines 35-44, [demand model gives predicted sales of

an item based on price], w/ col. 8, lines 23-29, shows visibility model based on sales is constructed for prices in a particular store, thereby making these sales internal);

Ouimet '641 fails to disclose the following, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '893:

the fraction of sales of each discrete set of related products made up by each said product with the internal sales model for the discrete set of related products, (Col. 8, lines 9-13, shows demand parameter can depend on the degree to which the relative portion of the sales history is free of noise where the relative portion is analogous to the fraction of internal sales. ]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that a fraction or portion of the market share can be modeled and maximized by using the demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period with the motivation of determining a fraction or portion of market shares according to categories.

Neither Ouimet '641 nor Ouimet '893 disclose multiplying, but Ouimet '641 does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '162 discloses:

Multiplying, (col. 2, lines 15-17, [shown that the primary objective function is combined with the constraint function and multiplied by a weighing factor, resulting in an

optimized objective function, w/ Col. 4, lines 2-14, [shows that market share is the primary objective function and is multiplied by a factor to get maximized gross profits, in this case, this calculation is analogous to multiplying in the claim limitation since they both yield an optimized result]). Ouimet et al '162 discloses this limitation in an analogous art for the purpose of using a multiplication factor to yield optimized results.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to determine an internal sales model for each discrete set of related products so that the optimization engine is able to calculate demand for said products by multiplying the fraction of sales of each discrete set of related products made up by each said product with the internal sales model for the discrete set of related products to which the product belongs with the motivation of determining an optimized solution.

As per claim 16, neither Ouimet '641, nor Ouimet '893 disclose the following, however, the following is obvious with Hartman since Hartman discloses Bayesian modeling used for optimization in the Abstract, lines 1-4. Also, in col. 10, lines 10-21, it is shown that in using the Bayesian ensemble, when optimization occurs, the requested functions and derivative values are used in the optimization value and a single optimal value is output at the completion of all optimizations, thereby ensuring that the final value is computed at the completion of optimization, by using only those values requested for that single model only. In this case, and in a case where values are missing, these values will already be known for this particular model:

Wherein said econometric engine further comprises an imputed variable generator for providing imputed econometric variables to the optimization engine, the imputed econometric variables used for estimating missing or incomplete product parameters.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the econometric engine to further comprise an imputed variable generator for providing imputed econometric variables to the optimization engine, the imputed econometric variables used for estimating missing or incomplete product parameters, with the motivation of computing optimized values based on values only requested for a particular model.

6. Claims 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641) and further in view of Ouimet et al (US 6,078,893), and further in view of Bhattacharya, (US 4,907,170).

As per claim 14, neither Ouimet et al '641, nor Ouimet et al '893 disclose the following, but Ouimet et al '641 does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However Bhattacharya discloses:

wherein said econometric engine further comprises an imputed variable generator for providing imputed econometric variables to the optimization engine, the imputed econometric variables used for estimating missing or incomplete product parameters, (Col. 5, lines 36-49, shows structure that infers missing information and in

turn produces outputs within a specified degree of accuracy). Bhahacharya discloses this limitation in an analogous art for the purpose of showing that missing data can be accounted for in an econometric environment.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to further comprise an imputed variable generator for providing imputed econometric variables to the optimization engine, the imputed econometric variables used for estimating missing or incomplete product parameters with the motivation of showing that missing values can be replaced with values when utilizing an econometric engine.

As per claim 15, Ouimet '641 discloses:

receiving raw econometric data, (Col. 6, lines 29-67, inputs price  $p$  and base units);

Neither Ouimet et al '641, nor Ouimet et al '893 disclose the following, but Ouimet et al '641 does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However Bhattacharya discloses:

detecting product parameter inconsistencies in the raw econometric data; correcting the detected inconsistencies in the raw econometric data to generate a cleansed initial dataset; and generating imputed econometric variables using the cleansed initial dataset, (Col. 5, lines 36-49, shows structure that infers missing information and in turn produces outputs within a specified degree of accuracy).

Bhahacharya discloses this limitation in an analogous art for the purpose of showing that missing data can be accounted for in an econometric environment.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to detect product parameter inconsistencies in the raw econometric data, to correct the detected inconsistencies in the raw econometric data to generate a cleansed initial dataset, and to generate imputed econometric variables using the cleansed initial dataset, with the motivation of showing that missing values can be replaced with values when utilizing an econometric engine.

### ***Response to Arguments***

7. Applicant's arguments filed 8/30/07 have been fully considered but they are not persuasive.

As per claims 1, 4, and 6, applicant argues that Ouimet '641 discloses a "promotional cost", which is not is not product specific, but rather dependent upon the "amount of money spent upon the promotion", where in the present invention, the total costs are generated for the product at a given time and a given store, and dependent upon the product's attributes, where prior art teaches that promotional costs are management driven costs unrelated to the product attributes. However, this limitation is obvious since promotions can be based on attributes of a product, for example, for buy one get one free, and the product is a cookie, a buyer would receive an additional cookie based on the fact that he or she is buying "cookies", where the product being a



"cookie" and not a "doughnut" is an attribute. Applicant also argues that the costs in the "optimum price" in prior art are not fixed, but rather dependent on store revenue.

However, the examiner disagrees, in contrast, examiner interprets Ouimet '641 as disclosing that the "optimum price" is related to the "visibility" which is defined as the amount by which the demand for an item is increased when a given promotion is run as shown in col. 2, lines 1-17, which does not make the costs variable.

As per claims 1, 4 and 6, applicant also argues that Ouimet '641 does not teach or suggest utilizing "industry data to provide standard cost estimates", and argues that Ouimet '641 "tunes" a model to a data set. (Column 5, lines 40-43), and that there is no data generation or estimation. . However, 5, lines 41-42, teaches the application of standard fitting, but also discloses perceived pricing estimates.

As per claims 1, 4 and 6, applicants disagree with the Examiner's statement that "adjustable market model parameters" is "obvious with Ouimet '641 since the volume of sales is a variable parameter." Applicant argues that there are literally thousands of variable parameters that may affect costs; from weather, to the date, and political climates, and claims 1, 4 and 6 ties variable costs to a single variable, namely sales volume. Applicant also argues that the "penalty" and "adjustable market model parameters" disclosed in Ouimet '893 act to reduce sensitivity "g/" within the market demand model. (Column 6, lines 41-60), and that the purpose for the "penalty" and "adjustable market model parameters" appears to stabilize "g/" when there are no price changes since sensitivity is subject to "unstable" fluctuation. (Column 6, lines 41-60), and that such demand model tuning is unrelated to cost/variable cost. However, tying

variable costs to a single variable, namely sales volume does not eliminate sales volume as being an adjustable market model parameter. In fact, since the sales volume is tied to variable costs, once the costs fluctuate, so will the sales volume, thereby making the sales volume an adjustable parameter. Also, as described in the rejection, Ouimet '893 discloses a "method for tuning a demand model" such that "[t]he resulting demand model parameters conform to... sales history..., external market information." (Abstract; Column 1, lines 55-65). Here applicant argues that Ouimet '893 appears to never mention costs whatsoever. However, here, the demand model is tuned with respect to sales history, and when combined with the Ouimet '641 reference, it is obvious that the sales history, which is analogous to sales volume, is tied to variable costs, thereby suggesting that demand model tuning is related to costs/variable costs.

In addition, applicant argues that "promotional cost, i.e., the amount of money spent on the promotion" is single faceted and inherently different than the multifaceted totality cost approach as is disclosed by the present invention since there is no calculation, generation, inflection or estimation required for such a promotion cost, where the present invention, however, generates a cost model by utilizing an array of cost variables and by utilizing industry standards data to limit required input, and the disclosed "promotional cost" of Ouimet '641 therefore does not suggest, nor make obvious, the "costing activity including labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing, and wherein computing costs utilizes industry standards data". However, in col. 8, lines 16-20, it shows the perceived pricing method being used, where profits, sales, etc are calculated, in order to optimize true

price. During this process, a visibility model is used, and is generated by forming a table providing the relative increase in demand for an item in col. 8, lines 35-38.

In addition, Applicants assert that while grouping products by related effects upon demand is well known, clustering products such that "each said set is made up of highly substitutable related products" of Claims 1, 4 and 6 is a novel process, and that related by demand is fundamentally distinct from substitutable. Applicant argues that the grouping of products by demand as disclosed in Ouimet '893 appears to generate a "system of coupled equations that describe the demand for each item", where in Claims 1, 4 and 6 "the internal sales model is for the discrete sets of highly substitutable products". However, specifying of *substitutable* as a type of claim amounts to the recitation of non-functional data; the type of claim has no bearing on the invention as claimed, and thus carries no patentable weight. In addition, since prior art teaches grouping of products, this grouping suggests describing the demand for a group or set of items.

In addition, Applicants argue that tuning a demand model by a figure of merit function selected by the user does not teach or suggest the "each said set is defined by a user such that each said set is unique to said user, and wherein said sets are generated by comparing product attribute information" of Claims 1, 4 and 6, but instead, selection of figure-of-merit function is performed such that parameter choice "results in a lower value of the effective figure-of-merit." However, if the particular function is selected by the user, this suggests the models uniqueness according to the user selection.

In addition, applicants reassert that the promotional cost disclosed in Ouimet '641 does not teach or suggest the "total cost" of Claims 1, 4 and 6. However, these arguments have already been made by applicant, and a response is discussed above in preceding paragraphs.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 571-272-6734. The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



A. R. B.  
November 8, 2007